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# IMAGES IN CARDIOLOGY

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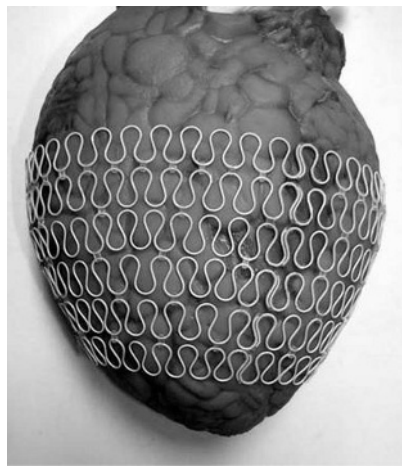
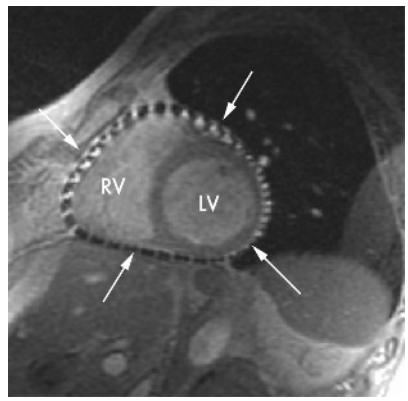
## MRI of a novel passive cardiomyoplasty device: the Paracor ventricular support system

A new passive cardiomyoplasty device, the Paracor ventricular support system (Paracor Medical Inc., Sunnyvale, California, USA) is being evaluated in heart failure patients to assess its ability to halt or reverse the disease process of dilated cardiomyopathy. During a minimal invasive surgical procedure the mesh is placed around the heart, and is intended to reduce wall stress by the application of low levels of epicardial pressure and thus treat progression of cardiomyopathy. The prosthetic elastic mesh is made of nitinol and silicon and applies enough pressure to reduce wall stress but not enough to cause constriction. Preoperatively, individual sizing of the mesh is achieved by magnetic resonance imaging (MRI) measurements of ventricular diameters and volumes.

The first postoperative MR image of the device in place in a human is shown here. In this short axis image the mesh is clearly visible due to the artefact of its metal parts that produce a signal void in the gradient echo MR images. If positioned correctly the device covers both the left and the right ventricle from base to apex and leaves the most apical part of the heart uncovered. Since the mesh is MR compatible, MRI is uniquely suited to assess its correct position around the heart and the therapeutic effects on left and right ventricular volumes and function during follow-up examinations.



Structure and shape of the Paracor mesh device comprising nitinol and silicone. The Paracor mesh is placed around a heart model.




Basal short axis cine gradient echo image in a heart failure patient that nicely displays the device (arrows) sitting around both ventricles. To enhance visibility of the device a gradient echo sequence was chosen, since metallic artefacts are most pronounced with this technique (LV, left ventricle; RV, right ventricle).

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